to prevent accidents following cervical manipulation.

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The Musculoskeletal Physiotherapy of Australia position on pre-manipulative testing for the cervical spine

The MPA undertook a survey of its members in 1997 to determine their compliance with and opinion of the APA Protocol for Pre-Manipulative Testing of the Cervical Spine (Magarey et al 2000a, Magarey et al *submitted-a*). As a result of that survey and a comprehensive literature review, the MPA developed a new set of guidelines for pre-manipulative procedures for the cervical spine (Magarey et al 2000b, Magarey et al *submitted-b*).

The new guidelines were the result of a comprehensive consultative process. This included incorporating membership survey results, and consulting with VBI research experts, medico-legal experts and numerous APA committees. The current literature related to vertebral artery flow was reviewed with particular emphasis on the incidence of adverse effects of cervical manipulation and the legal issues related to informed consent. While the membership strongly supported maintenance of a guideline by the profession, their feedback encouraged revision reducing the length and incorporating research. Evidence is available on links between specific symptoms and vertebral artery dysfunction. However, only estimates on the safety of cervical manipulation and the efficacy of the current physical testing for VBI related dysfunction are currently available.

There has not yet been a legal test case against a physiotherapist that would help to determine the most appropriate guidelines in relation to informed consent. However, more stringent guidelines regarding informed consent were recommended, based on extrapolation from legal judgments made recently in relation to other health practitioners.

The MPA concluded that continued support for screening profession. Such guidelines allow a degree of clinical reasoning, rather than following the previous rigid rules, of which the profession was non-compliant. The MPA also feels strongly that the profession has an urgent ethical and legal obligation to emphasise the issues of informed consent related to cervical manipulation.

The Clinical Guidelines for Pre-Manipulative Procedures for the Cervical Spine are available from the APA National Office.

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on behalf of Musculoskeletal Physiotherapy Australia

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Are we on the right track?

We applaud Musculoskeletal Physiotherapy Australia for the formulation of the new pre-manipulative guidelines. The new guidelines are a step forward from the previous protocol because they allow individual practitioners choice when making clinical decisions. The previous protocol proved to be legally challenging and further increased practitioners' fear of manipulating.

The increasing emphasis on a thorough subjective interview is encouraging, and reinforces the requirement for a competent level of clinical reasoning. With the previous protocol it appears that a majority of clinicians placed a greater emphasis on the physical examination. The recent work of Rivett and colleagues (2000) has demonstrated how variable the physical tests can be. A review of four recent New Zealand cases of adverse reactions to manipulation found that in three of the four cases, the clinician had insufficiently weighed subjective

evidence before deciding on manipulation as part of the clinical management.

It is not clear what type of techniques were applied to produce these adverse reactions, nor how well the techniques were applied. If you apply manual procedures to your clients, when did you last review your own techniques?

Have the pre-manipulative procedures exaggerated the risks of manipulation? Reports of risk of stroke following manipulation vary from 1:1,000,000 to 1:163,000 (Rivett and Reid 1998). A manipulative physiotherapist who manipulates three or four upper cervical spines per week will not perform 163,000 manipulations in a practising lifetime.

The new guidelines may meet with greater compliance as a result of the changes. The requirement for a thorough subjective examination emphasising a high level of clinical reasoning is essential. Perhaps there should be an equally strong emphasis on the need for a high level of technical skill and application in performing the manipulation.

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Pre-manipulative testing: predicting risk or pretending to?

Clinical practice guidelines should be evidence-based and useful. Unfortunately, the APA guidelines largely are not. Their recommendations include:

History taking: It is prudent to avoid cervical manipulation in patients with pre-existing cerebrovascular disease, whether vertebrobasilar *or* carotid in location. The guidelines give a list of possible vertebrobasilar symptoms, including neck pain and headache. They do not, and perhaps cannot, provide accurate discriminative information, since the list is open-ended and contains many non-specific symptoms. Furthermore, many stroke victims have been young adults without obvious risk factors or warning symptoms.

Examination: Screening tests should be valid and reliable predictors of risk. Pre-manipulative provocative testing has neither of these qualities, with available scientific evidence failing to show predictive value or justify its use (Cote et al 1996, Di Fabio 1999, Licht et al 2000). Testing does not determine that manipulation will be safe. Briefly sustained end of range movements and the other manoeuvres described (with or without Doppler) cannot reliably determine the safety of cervical manipulation proper, after which arterial dissection and intimal contusion with thrombosis can occur, rather than simply transient flow changes related to neck position. Yet provocative testing is recommended by the APA guidelines, including for those with pre-existing symptoms and in whom riskier techniques are planned.

Screening procedures should not be harmful. However, provocative testing may have some risk. There is a case for avoiding end-range cervical rotation of any kind (screening or manipulation proper) in patients with cerebrovascular symptoms. Yet in these patients, the guidelines promote most rigorous provocative testing.

Informed consent: This is the last but strongest element of the guidelines. The patient has the right to know the nature of his or her problem and treatment options with potential risks and benefits. Patients need to be informed of the small but significant risk of serious complications, including stroke, and their unpredictable occurrence. Treatment should also have proven benefit that outweighs any risks. Adequately informed patients may decide to avoid cervical manipulation with end-range rotation techniques and/or high-velocity thrust techniques, since no scientific evidence favours these over other available physical techniques.

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Do the guidelines do what they are supposed to?

The unwritten purpose of the guidelines appears to be to reduce risk to patients of cervical manipulation and to provide legal indemnity to physiotherapists. Do the guidelines achieve this purpose?

Do the guidelines decrease risk from manipulation? To be effective, the guidelines must address all known and potential risk factors. Despite this, only symptoms of vertebrobasilar insufficiency (eg dizziness) are mentioned